

**P A T E N T****INSTITUT FRANÇAIS DU PÉTROLE****PROCESS AND APPARATUS EMPLOYING A PLURALITY OF CATALYTIC BEDS  
IN SERIES FOR THE PRODUCTION OF LOW SULPHUR GAS OIL****Inventors: Thierry CHAPUS and Frédéric MOREL****ABSTRACT**

A process for hydrotreating gas oil comprises:

- A first gas oil desulphurisation step carried out in a first catalytic zone comprising a desulphurisation catalyst;
- at least partial elimination of the hydrogen sulphide formed at the end of the first step;
- one or more desulphurisation steps carried out in one or more catalytic zones comprising a desulphurisation catalyst. Desulphurisation in this reactor is more effective because of the much lower  $H_2S$  partial pressure; the distribution of the catalyst in the different zones is selected so as to maximise the catalytic activity, and thus minimise the volume of catalyst required for a unit of a given capacity operating at fixed operating temperature and pressure, so as to obtain an intensely desulphurised gas oil.